APPENDIX B

Version with no Markings to Show Clean r written paragraphs

On page 6, replace the paragraph beginning at line 12 with the following:

Fig. 1A is a schematic representation of the present invention according to one embodiment, in the absence of hydrogen gas.

Fig. 1B is 1 is a schematic representation of the present invention according to a second embodiment, in the absence of hydrogen gas.

On page 18, replace the paragraph beginning on line 23 with the following:

Referring to **Figs. 1A and 1B** **[Fig.1]**, light bulb 10 comprising incandescent filament 16 has deposited thereon a rare earth metal thin film layer 12, preferably comprising a trivalent rare earth metal such as yttrium, that is reversibly reactive with hydrogen to form both metal dihydride and metal trihydride reaction products. Over the rare earth metal thin film layer 12 is deposited a protective layer 14, comprising a suitable material, such as for example Pd, Pt, Ir, Ag, Au, Ni, Co, or alloys thereof, and most preferably comprising palladium. In the absence of hydrogen in the ambient environment to which the

bulb is exposed, the rare earth metal thin film 12 is in a metallic, optically reflective dihydride state. Light from filament 16 is attenuated by the dihydride state of rare earth metal thin film layer 12 and thus only a portion of it reaches photo-detector 18.

On page 19, replace the paragraph beginning on line 24 with the following:

In Figure 1A, **[In this embodiment,]** filament 16 of coated light bulb 10 is additionally a heat source, elevating the temperature of rare earth thin film 12. **In Figure 1B, heat-generating element 17 is depicted as a resistive element. However, heat-generating element 17 may comprise incandescent bulbs, resistive wires, exothermic chemical reactions, ultrasonic radiation, acoustic radiation, microwave radiation, laser radiation or other such heat-generating elements as known to those skilled in the art.** The transition of rare earth thin film 12 from reflective dihydride to transparent trihydride state and back, in response to the absence or presence, respectively, of hydrogen occurs much more rapidly at elevated temperatures. This reduces both the response time of the detector in the presence of hydrogen and its recovery to the opaque "null state" in the absence of hydrogen.